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(54) **Electronic data storage apparatus with key management function and electronic data storage method**

(57) A storage apparatus includes a key management unit (12) for managing an individual key unique to the apparatus and a common key shared with other storage apparatuses, and an encryption unit (13) for performing an encrypting process or verifying data for performing the encrypting process on electronic data stored in the apparatus to which the unit belongs using the in-

dividual key, and performing the encrypting process or verifying the data on the electronic data transmitted to or received from another apparatus using the common key. Thus, the apparatus communicates data using an applicable common key in a local environment and a global environment, appropriately manages a key in each environment, and guarantees the security of the electronic data.

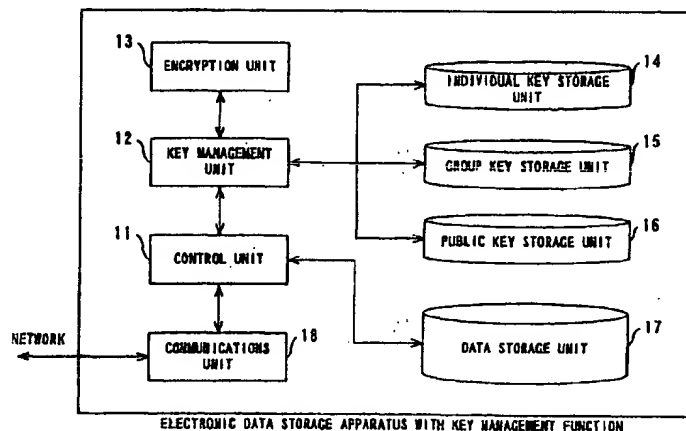


FIG. 2

EP 1 011 222 A3



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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 4647

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|---|--|---|---|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) |
| X | ADAMOUSKI F J: "Encryption technology other than PKI" SECURITY TECHNOLOGY, 1998. PROCEEDINGS., 32ND ANNUAL 1998 INTERNATIONAL CARNAHAN CONFERENCE ON ALEXANDRIA, VA, USA 12-14 OCT. 1998, NEW YORK, NY, USA, IEEE, US, 12 October 1998 (1998-10-12), pages 108-116, XP010309584 ISBN: 0-7803-4535-5 * page 111, paragraph 2.2.1 * * page 112, left-hand column - page 113, right-hand column, paragraph 2 * * page 113, right-hand column, paragraph 2.6 - page 114, left-hand column, line 17 * * page 114, right-hand column - page 115, left-hand column, paragraph 3 * | 1-14, 17-23 | H04L9/08 |
| A | --- | 15,16 | |
| X | MITTRA S: "IOLUS: A FRAMEWORK FOR SCALABLE SECURE MULTICASTING" COMPUTER COMMUNICATIONS REVIEW, ASSOCIATION FOR COMPUTING MACHINERY. NEW YORK, US, vol. 27, no. 4, 14 September 1997 (1997-09-14), pages 1-12, XP002931671 ISSN: 0146-4833 * page 4 - page 8 * * page 11 * | 15,16 | TECHNICAL FIELD(S) SEARCHED (Int.Cl.7) H04L |
| A | --- | 1-14, 17-23 | |
| | -/-- | | |
| The present search report has been drawn up for all claims | | | |
| Place of search BERLIN | | Date of completion of the search 1 August 2003 | Examiner Carnerero Álvaro, F |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document</p> <p>T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document</p> | | | |

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EUROPEAN SEARCH REPORT

Application Number
EP 99 30 4647

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
|---|---|---|--|
| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int.Cl.7) |
| A | MENEZES, OORSCHOT, VANSTONE: "Handbook of applied cryptography" HANDBOOK OF APPLIED CRYPTOGRAPHY, CRC PRESS SERIES ON DISCRETE MATHEMATICS AND ITS APPLICATIONS, CRC PRESS, 1997, pages 568, 570-572, XP002249713 BOCA RATON, FL, US ISBN: 0-8493-8523-7 * page 568, paragraph 13.5.2.1 - paragraph 13.33 * * page 570, paragraph 13.6 - page 572, paragraph 13.40 * | 1-23 | |
| A | EP 0 715 241 A (MITSUBISHI CORP) 5 June 1996 (1996-06-05) * abstract * | 1-23 | |
| | | | TECHNICAL FIELDS SEARCHED (Int.Cl.7) |
| | | | |
| The present search report has been drawn up for all claims | | | |
| Place of search BERLIN | | Date of completion of the search 1 August 2003 | Examiner Carnerero Álvaro, F |
| <p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons A : member of the same patent family, corresponding document</p> | | | |

EPO FORM 1503.03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 30 4647

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

01-08-2003

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---------------------|----------------------------|---------------------|
| EP 0715241 A | 05-06-1996 | EP 0715241 A2 | 05-06-1996 |
| | | JP 8287014 A | 01-11-1996 |
| | | US 2002052850 A1 | 02-05-2002 |
| | | US 2002112173 A1 | 15-08-2002 |
| | | US 6408390 B1 | 18-06-2002 |
| | | US 2001013021 A1 | 09-08-2001 |
| | | US 5867579 A | 02-02-1999 |
| | | US 6424715 B1 | 23-07-2002 |
| | | US 6128605 A | 03-10-2000 |
| | | US 2002059238 A1 | 16-05-2002 |
| ----- | | | |

EPO FORM P0158

For more details about this annex : see Official Journal of the European Patent Office, No. 12/02